

WHAT IS CLAIMED IS:

- 1 1. A method of tuning a voltage controlled oscillator comprising:
2 measuring a frequency of oscillation of the voltage controlled oscillator;
3 comparing the frequency of oscillation to a desired frequency;
4 generating a logic signal; and
5 applying the logic signal to a resistor,
6 wherein the resistor is coupled to a first capacitor and a second capacitor, the first
7 capacitor is coupled to an inductor, and the second capacitor is coupled to a first supply terminal.

- 1 2. The method of claim 2 wherein the second capacitor is a junction varactor.

- 1 3. The method of claim 2 wherein the second capacitor is a MOS varactor.

- 1 4. The method of claim 2 wherein the first supply terminal is ground.

- 1 5. An integrated circuit having a voltage controlled oscillator comprising:
2 a first inductor;
3 a first capacitor coupled to the first inductor;
4 a first varactor diode coupled to the first capacitor; and
5 a first isolation resistor coupled to the first capacitor and the first varactor diode,
6 wherein the first isolation resistor is configured to receive a control voltage.

- 1 6. The integrated circuit of claim 5 further comprising:
2 a second inductor;
3 a second capacitor coupled to the first inductor;
4 a second varactor diode coupled to the first capacitor;
5 a second isolation resistor coupled to the second capacitor and the second varactor
6 diode, wherein the second isolation resistor is configured to receive the control voltage;
7 a first device having a drain coupled to the first inductor and a gate coupled to the
8 second inductor; and
9 a second device having a drain coupled to the second inductor and a gate coupled
10 to the first inductor.

1 7. The integrated circuit of claim 6 further comprising:
2 a current source coupled to a source of the first device and a source of the second
3 device.

1 8. The integrated circuit of claim 7 wherein the current source is a common
2 source device.

1 9. The integrated circuit of claim 7 wherein the first device and the second
2 device and n-channel CMOS devices.

1 10. An integrated circuit having a voltage controlled oscillator comprising:
2 a first inductor;
3 a second inductor;
4 a first capacitor coupled to the first inductor;
5 a second capacitor coupled to the first inductor;
6 a third capacitor coupled to the first capacitor;
7 a fourth capacitor coupled to the second capacitor;
8 a first isolation resistor coupled to the first capacitor and the third capacitor,
9 wherein the first isolation resistor is configured to receive a control voltage;
10 a second isolation resistor coupled to the second capacitor and the fourth
11 capacitor, wherein the second isolation resistor is configured to receive the control voltage;
12 a first device having a drain coupled to the first inductor and a gate coupled to the
13 second inductor; and
14 a second device having a drain coupled to the second inductor and a gate coupled
15 to the first inductor.

1 11. The integrated circuit of claim 10 further comprising:
2 a current source coupled to a source of the first device and a source of the second
3 device.

1 12. The integrated circuit of claim 11 wherein the current source is a common
2 source device.

1 13. The integrated circuit of claim 11 wherein the first device and the second
2 device and n-channel CMOS devices.

1 14. The integrated circuit of claim 11 wherein the third and fourth capacitors
2 are junction varactors.

1 15. The integrated circuit of claim 11 wherein the third and fourth capacitors
2 are MOS varactors.

1 16. The integrated circuit of claim 11 wherein the control voltage is a logic
2 signal.

1 17. The integrated circuit of claim 11 wherein the control voltage is an analog
2 signal.

1 18. The integrated circuit of claim 10 wherein the integrated circuit is an RF
2 transceiver.

1 19. A phase-locked loop comprising:
2 a phase detector configured to receive a reference clock;
3 a low-pass filter coupled to the phase detector;
4 a voltage-controlled oscillator coupled to the low-pass filter; and
5 a divider coupled between the voltage-controlled oscillator and the low-pass filter,
6 wherein the voltage-controlled oscillator comprises:
7 a first inductor;
8 a second inductor;
9 a first capacitor coupled to the first inductor;
10 a second capacitor coupled to the first inductor;
11 a third capacitor coupled to the first capacitor;
12 a fourth capacitor coupled to the second capacitor;
13 a first isolation resistor coupled to the first capacitor and the third
14 capacitor, wherein the first isolation resistor is configured to receive a control voltage;

15 a second isolation resistor coupled to the second capacitor and the fourth
16 capacitor, wherein the second isolation resistor is configured to receive the control voltage;
17 a first device having a drain coupled to the first inductor and a gate
18 coupled to the second inductor; and
19 a second device having a drain coupled to the second inductor and a gate
20 coupled to the first inductor.

1 20. The integrated circuit of claim 19 wherein the first device and the second
2 device and n-channel CMOS devices.

1 21. The integrated circuit of claim 19 wherein the third and fourth capacitors
2 are junction varactors.

1 22. The integrated circuit of claim 19 wherein the third and fourth capacitors
2 are MOS varactors.

1 23. An electronic system comprising the phase-locked loop of claim 19.